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Cooperative
**ECONOMIC INSECT
REPORT**

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Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT**HIGHLIGHTS**Current Conditions

GREENBUG continues economic on sorghum in some States; predators, parasites, and chemical controls reducing infestations. (p. 831).

CORN EARWORM moths increasing in southern Delaware and on Eastern Shore of Virginia; flights heavy in few areas of Wisconsin. CORN LEAF APHID heavy and increasing on corn throughout Maryland; troublesome on sweet corn in many areas of New Jersey. (pp. 831-832).

EUROPEAN CORN BORER most important pest of sweet corn in Hudson Valley of New York; larvae very heavy on much corn in central and eastern Maryland. SORGHUM WEBWORM heavy on sorghum in southern Oklahoma. (pp. 833-834).

GREEN CLOVERWORM continues economic on soybeans in southern and central Minnesota. (p. 837).

LESSER CORNSTALK BORER more serious than in many years in 9 major peanut counties of southeastern Alabama. (p. 837).

BOLL WEEVIL continues heavy in central and southern Alabama; boll damage heavy in late cotton in western Tennessee. BOLLWORM damage remains serious in western Tennessee. (p. 838). SPIDER MITE damage severe on late cotton in western Tennessee; infestations heavy in South Carolina Piedmont. (p. 839).

CABBAGE LOOPER flights heavy in cotton in delta counties of Mississippi; larvae severe on various vegetables on Eastern Shore of Virginia. (pp. 839-841).

EUROPEAN RED MITE increasing on apples and peaches in some areas of Iowa, Indiana, and Ohio. (p. 842). TWO-SPOTTED SPIDER MITE outbreaks severe in apple orchards in Mesa and Delta Counties, Colorado (p. 843).

Mosquito-borne EASTERN VIRAL ENCEPHALITIS reported in horses in central and southern New Jersey and in pheasants on Eastern Shore of Maryland. FACE FLY heavy on cattle throughout Ohio; annoying livestock in other States. (p. 846).

PINK BOLLWORM problem continues on cotton in Yuma County, Arizona. (p. 849).

Detection

New State records include ASIATIC OAK WEEVIL in Arkansas (p. 845) and a PLANT BUG in Oregon (p. 847).

For new county records see page 851.

Reports in this issue are for week ending August 23 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 26

HIGHLIGHTS: Cool and comfortable, West and North; hot and humid Central and East, until weekend. Stormy along front separating air masses.

PRECIPITATION: Generous rains fell in the Pacific Northwest early in the week and in the northern Rockies at midweek. Numerous locations in Oregon and Idaho have received more rain in August 1968 than in any previous August. Air-mass thunder-showers occurred in the Deep South and along the Ohio River on several days during the week. The principal precipitation, however, fell from storms along the front that separated the cold and warm air masses. Severe weather occurred in Minnesota and Wisconsin on Monday when a tornado leveled barns and damaged other buildings in the Kenyon, Minnesota, vicinity and other twisters struck near Marinette, Wisconsin. High winds associated with thunderstorms damaged barns and power lines near Wausau and 3.44 inches of rain fell at Watertown, in about 2 hours on Tuesday morning. Locally heavy rains also fell in the normally dry areas of eastern Arizona - 1 to 2 inches in some localities - on Tuesday. On Wednesday, generous rains fell in southern Utah. Heavy showers - nearly 3 inches - fell at Bemidji, Minnesota, Thursday night and Friday morning when a similar amount fell in northern New Jersey. Only light, widely scattered showers fell in the Southeast. In some eastern areas, last week was the driest week since mid-June. Much of the Desert Southwest and parts of the Corn and Cotton Belts received no rain.

TEMPERATURE: Comfortably cool temperatures occurred from the Pacific Ocean to the western Great Plains and in the northern border States while unseasonably hot weather persisted from the central and southern Great Plains to the Atlantic coast. Throughout most of the week, a front stretched from the Southwest to the northern Great Plains, thence eastward to New England. Cool air lay west and north of the front. A HIGH, centered over the Southeast drove hot, humid, gulf air northward over mid-America. Daytime temperatures over the West were mostly in the cool, comfortable 70's except in the southwestern deserts where they reached the 90's on most days. Nighttime temperatures dropped to the 40's and 50's except, at higher elevations, where minimums below 40° occurred. Flagstaff, Arizona, elevation 7,000 feet, registered 24° Friday morning, August 23, the coldest August temperature of record at Flagstaff. The previous record-low for August was 33°. Numerous locations in Utah registered temperatures near or below the freezing mark on Friday morning. Temperatures along the Canadian border ranged from the upper 50's and 60's in the early mornings to the 70's on most afternoons. Un-Weather continued on page 850.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - TEXAS - Activity on sorghum in Panhandle and High Plains markedly reduced by numerous parasites and predators. About 1.5 million acres of sorghum sprayed during recent heavy sorghum infestation. (Thomas). OKLAHOMA - Decreasing rapidly on sorghum in panhandle counties. Lady beetles ranged up to 125 (average 40) per plant in some fields. Aphids not reinfesting treated fields. Ranged 0-10 per sorghum plant in Major County, averaged 250 per plant 10 days ago. Moderate to heavy in sorghum in Roger Mills, Caddo, Kiowa, Tillman, Bryan, and Marshall Counties. Averaged 1,500 per plant in Tillman County. Light, up to 25 per leaf, on occasional sorghum leaves in Mayes and Rogers Counties. (Okla. Coop. Sur.). KANSAS - Light to trace in many previously heavily infested sorghum fields in Pratt, Kiowa, Ford, Gray, Haskell, Finney, Scott, and Logan Counties. Predators and parasites apparently reduced numbers by 75 percent or more in most fields. Moderate, 2,000 per leaf, in occasional field in southwest district, but predators and parasites reducing aphids. Light in heads, in whorls, and behind leaf sheaths in many cases. Trace numbers may survive in isolated areas for few weeks. (Simpson). NEBRASKA - Trace in volunteer wheatfield in Nuckolls County. (Keith). Small colonies on sorghum test plots at Scotts Bluff Experiment Station; ranged 250-500 per plant on lower leaves of about 5-6 percent of plants. Predators increasing. (Hagen, Aug. 16). SOUTH DAKOTA - Economic on sorghum near Aberdeen, Brown County; near Draper, Jones County; near Winner, Tripp County; and in western Yankton County. Aerial treatments underway. (Kantack). COLORADO - Infestation on sorghum moving north in eastern area. Ranged 0-2,000 per leaf on sorghum and 0-5 per leaf on corn in northeastern area; no damage to corn. Light, 0-200 per lower leaf, on sorghum in Morgan, Logan, Sedgwick, Phillips, and Washington Counties. Controls in progress on sorghum in Yuma, Kit Carson, and Cheyenne Counties; aphids up to 2,000 per leaf. Light to very heavy in all sorghum checked in Prowers, Bent, Otero, Crowley, and Pueblo Counties; controls in progress. (Johnson, Schweissing). WYOMING - Still light, 0-80 per plant, in sorghum in Goshen and Laramie Counties. Light, less than 1 per plant, in cornfield near Carpenter, Laramie County. (Parshall). CALIFORNIA - Adults heavy on cotton leaves in plantings at Riverdale, Fresno County. Aphids in flight from sorghum fields. Heavier and more widespread than in other years. (Cal. Coop. Rpt.).

ASTER LEAFHOPPER (*Macrosteles fascifrons*) - COLORADO - Averaged 2 per 20 square feet in all lettuce fields checked in Pueblo and Otero Counties; up to 23 per 20 square feet in one field. (Schweissing).

BEEF LEAFHOPPER (*Circulifer tenellus*) - COLORADO - Larvae 15-20 per 100 sweeps on tomatoes in Otero County. (Schweissing).

CORN EARWORM (*Heliothis zea*) - NEW YORK - No moths trapped in Hudson Valley. Larvae still low on sweet corn in central Hudson Valley area. (N.Y. Wkly. Rpt., Aug. 19). NEW JERSEY - Adults increasing on sweet corn. Infestations on lima beans should develop by end of August. (Ins.-Dis. Newsltr.). DELAWARE - Adults increased considerably in blacklight traps in Sussex County. (Burbutis). MARYLAND - Adults averaged 8+ per night in light trap at Centreville. Larvae damaged 30 percent of peppers in 1-acre stand near Salisbury, Wicomico County; larvae generally light in corn on Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Very low in light traps on Eastern Shore as of August 14. Increasing greatly after being relatively light early in season in Accomack County. Late-season numbers may exceed those of other years. Damage to late sweet corn excessive; some 100-percent infestations. (Hofmaster). SOUTH CAROLINA - Increasing in soybeans in southern area. Larvae up to 60-80 per 9 row feet in some fields. Damage expected in Piedmont area within 2 weeks. (Thomas, Aug. 20).

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

MICHIGAN - Appearance will be later than normal date of August 20-28; no moths detected at blacklight stations as of August 18. (Newman). WISCONSIN - Heavy flights at few locations early this week indicated by blacklight catches. (Wis. Ins. Sur.). SOUTH DAKOTA - Third to fifth instars infested 2 percent of corn ears in field near Yankton, Yankton County. (Jones). NEBRASKA - Ear infestations ranged 5-35 percent in 9 cornfields in Saline, Fillmore, Clay, Nuckolls, Thayer, and Jefferson Counties. (Keith). Infestations 3-15 percent in 15 cornfields in Seward, Butler, Polk, and Platte Counties. (Keith, Jansen). Light, infested about 5-6 percent of plants in 11 cornfields in Madison, Pierce, Antelope, Holt, Wheeler, and Greeley Counties. (Keith, Berberet). KANSAS - Early instars averaged 1 per plant on 50 percent of plants in McPherson County sorghum field. Trace to heavy on corn in southwest quarter of State. (Simpson). ARKANSAS - Only scattered and light on soybeans; next 2 weeks critical. Moths could concentrate in soybeans due to "cut-out" of cotton. (Boyer). OKLAHOMA - Ranged 2-10 per ear in all ears checked in cornfield in Craig County. (Okla. Coop. Sur.). NEW MEXICO - Larvae 1 or more per ear on 70-95 percent of ears in 9 cornfields in Virden Valley, Hidalgo County. (Nielsen). COLORADO - Larval infestations ranged 5-55 (average 28) percent in corn in Pueblo, Crowley, Otero, Bent, and Prowers Counties. (Schweissing). ARIZONA - Injured sorghum heads on 6 of 10 plants examined in Graham County. (Ariz. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW YORK - Predators increasing on sweet corn and natural decline of aphids begun in Hudson Valley; deep penetration of aphids into whorls in previous weeks very evident. (N.Y. Wkly. Rpt., Aug. 19). NEW JERSEY - Still troublesome on sweet corn in many areas. (Ins.-Dis. Newsltr.). MARYLAND - Heavy and increasing on corn statewide. (U. Md., Ent. Dept.). VIRGINIA - Light to heavy on Rockbridge and Augusta County corn. (Woodside, Aug. 5). MICHIGAN - Continued to decline on field corn. (Janes, Thompson, Aug. 19). WISCONSIN - Light on corn in southern third of State. Colony of 500 or more aphids rare. Field corn past stage for damage in most areas. Syrphid flies and lady beetles numerous on corn and should provide good biological control for several weeks. (Wis. Ins. Sur.). KANSAS - Light in sorghum examined in central, south-central, southwest, and west-central districts. Aphids behind leaf sheath and in many cases in head. Light in many cornfields. (Simpson). COLORADO - Extremely light on corn in northeastern area; found throughout eastern section. Light to heavy on sorghum in eastern area; very light in north-eastern area. (Johnson, Schweissing). WYOMING - Ranged 0-150 per corn plant and 0-200 per sorghum plant in Goshen and Laramie Counties. (Parshall).

HORNWORMS (*Manduca* spp.) - VIRGINIA - *M. sexta* moth collections continue very high, but only occasional *M. quinquemaculata* moths taken in Accomack County. (Hofmaster). MARYLAND - Full-grown larvae light on tobacco throughout southern area; averaged 1 per plant. Damage heavy on several acres of tobacco near Sandgates, St. Marys County. (U. Md., Ent. Dept.). NEW YORK - *M. quinquemaculata* problem in many Suffolk County gardens. (N.Y. Wkly. Rpt., Aug. 19). OREGON - *M. quinquemaculata* larvae very prevalent on garden tomatoes in Medford area, Jackson County. (Berry).

POTATO LEAFHOPPER (*Empoasca fabae*) - MISSOURI - Ranged 60-140 per 10 sweeps on alfalfa in east-central area. (Munson). MARYLAND - Decreasing rapidly on hay crops and vegetables statewide. (U. Md., Ent. Dept.).

POTATO PSYLLID (*Paratrioza cockerelli*) - WYOMING - Adults ranged 0-4 (average 1.6) per 100 sweeps in potatoes in Goshen and Laramie Counties. (Parshall).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OKLAHOMA - Ranged 100-200 per 10 sweeps in alfalfa in Caddo County. Heavy in scattered fields in Garvin County; light to moderate in Murray County. (Okla. Coop. Sur.). WYOMING - Ranged 7-60 per 100 sweeps in third-growth alfalfa in Goshen and Laramie Counties. (Parshall). COLORADO - Ranged 0-1,500 per 100 sweeps in alfalfa in Arkansas Valley; heaviest in Crowley County. Trace in Mesa, Delta, and Montrose Counties. (Schweissing, Bulla).

CORN, SORGHUM, SUGARCANE

CORN ROOTWORMS (*Diabrotica* spp.). - ILLINOIS - *D. virgifera* in Logan, Mason, Adams and De Kalb Counties for new county records. *D. longicornis* and *D. virgifera* adults per corn plant by district: East 0-11.0 (average 1.6), northeast 0-6.2 (average 2.2), northwest 0-7.2 (average 1.1), and west 0-2.9 (average 1.2). (Ill. Ins. Rpt.). WISCONSIN - Adult survey in corn half complete. Varied greatly between areas and between fields in an area. Averaged 10+ per plant in few fields, but averaged 0-4 per plant in most fields in southern third of State. *D. longicornis* predominant statewide. *D. virgifera* second in abundance in most areas, but most numerous where larval numbers low. *D. undecimpunctata howardi* third in abundance except where *D. virgifera* absent. (Wis. Ins. Sur.). MINNESOTA - Preliminary results of adult survey on corn in southern area. Highest averages per acre in Carver (58,647) and Winona (57,577) Counties. *D. longicornis* 13-100 percent of population, *D. virgifera* 0-87 percent. Second highest averages (21, 345-34,041 per acre) in 6 counties in southern 3 tiers of counties; *D. longicornis* dominant in all but 1 of 6 counties. (Minn. Ins. Rpt.). SOUTH DAKOTA - *D. virgifera* adults as numerous as week ago; averaged 2-6 per stalk in cornfields in southwestern Lincoln County and 4-5 per stalk in northern Yankton County. Adults heavy, 20-42 per stalk, in localized areas of some fields in Yankton County. *D. longicornis* adults abundant in cornfields in Lincoln County; represents up to 90 percent of adults in some fields. About 5 percent of adults *D. undecimpunctata howardi* in Lincoln County. (Jones). NEBRASKA - *D. virgifera* and *D. longicornis* adult infestations ranged from less than 1 to 10 (average 4-5) percent in 9 cornfields in Saline, Fillmore, Clay, Nuckolls, Thayer, and Jefferson Counties. (Keith). Up to 15 per plant in Madison County field. (Keith, Berberet).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - MARYLAND - Ranged 1-3 per ear in corn near Keymar, Carroll County. Infestations up to 90-100 percent in many northern Frederick County fields. (U. Md., Ent. Dept.). OHIO - Ranged 0-284 per 10-plant sample on corn in preliminary results of adult survey. Lightest in south-central counties, but generally higher in southwestern counties. "Goosenecking" on 1-20 percent of plants in 3 fields in Madison and Adams Counties. (Rose). INDIANA - Adult emergence continues light in State. (Huber).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - OHIO - Generally light; most common in south-central area. (Rose). NORTH DAKOTA - Adults up to 6 per plant on corn in Richland and Ransom Counties. (Brandvik). COLORADO - Adults light, 0-2 per field, in corn and sorghum in northeastern area. (Johnson).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - WYOMING - Adults 0-7 per corn plant in Laramie and Goshen Counties. (Parshall). NORTH DAKOTA - Adult emergence light in Richland County; averaged 1 per 100 plants. (Brandvik). INDIANA - None found in State as of August 23. (Matthew).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MARYLAND - Damage much above normal on corn in central counties in 1968. (U. Md., Ent. Dept.).

SAP BEETLES - MARYLAND - *Carpophilus lugubris* buildup continues in corn on Eastern Shore; infestations up to 40-65 percent in Queen Annes, Talbot, and Dorchester Counties. (U. Md., Ent. Dept.). OHIO - *Glischrochilus quadrisignatus* up to 10 and 15 per corn ear tip common; often associated with European corn borer damage throughout southern and southwestern areas. (Rose).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Most important pest on sweet corn in Hudson Valley. Moths still increasing; 29 caught August 13-14 in Poughkeepsie traps. Early instars infested 25 percent of untreated mid-whorl plants. Peak of second-brood hatching may be delayed past August 25. (N.Y.

Wkly. Rpt.). MARYLAND - Larvae very heavy in many cornfields in central and eastern sections. Second-generation larvae in ear tips in many completely infested fields in Frederick, Montgomery, and Howard Counties. Larvae much above normal statewide in 1968. (U. Md., Ent. Dept.). VIRGINIA - Third-brood moth emergence apparently peaked past week on Eastern Shore. (Hofmaster). OHIO - Larval observations indicate second generation numerous in 1968. Large first-generation flight during August may indicate larval increases. (Rose). MICHIGAN - Eggs and larval feeding noted on sweet corn; eggs generally light on some plantings. (Janes, Thompson, Aug. 19). MISSOURI - Fourth and fifth instars infested 5-32 percent of ear tips on corn in east-central area. (Munson). SOUTH DAKOTA - Second to fourth instars infested 80 percent of cornfield in northern Yankton County. (Jones).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Larvae, 1-5 per stalk, "ragging" leaves of 24 to 36-inch high grain sorghum in 100-acre field in Montgomery County; second generation begun. First generation very light, but second generation heavy in sorghum field in Perry County. First generation causing much damage to dough-stage corn in field in Hale County; lodging evident. (Glass et al.). NEW YORK - Increasing slowly; all stages on sweet corn in Hudson Valley. Found in sweet corn field in whorl stage in Suffolk County. (N.Y. Wkly. Rpt., Aug. 19).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Collected in Clay, Polk, Platte, and Greeley Counties for new county records. Fourth instar to full-grown larvae ranged 1-3 per ear on from less than 1 to 15 percent of corn plants. (Keith, Berberet). WYOMING - Total of 16 moths collected in blacklight trap July 22-28 in Goshen County; none taken July 29-August 4. (Parshall).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Heavy in heading sorghum in Carter, Murray, Love, Johnston, and Marshall Counties. Ranged up to 100 per in Marshall County. Few fields sprayed. (Okla. Coop. Sur.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ARIZONA - Damaged sorghum in Pinal County; may seriously damage some late-planted sorghum fields. (Ariz. Coop. Sur.).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Activity heaviest on grain sorghum in Garza County. Damage expected on blooming grain sorghum in Lynn, Lubbock, Crosby, and Floyd Counties. Adults per 25 grain sorghum heads ranged from 1 in Hockley County to 707 in Garza County during survey of 12 High Plains counties August 13-19. (Almand, Fieldon).

A WHITEFLY (Aleurocybotus occiduus) - ARIZONA - Very heavy on sorghum in Yuma County; root damage similar to that of 1967. May be factor in root rot problem. (Ariz. Coop. Sur.).

GRASSHOPPERS - MARYLAND - Melanoplus spp. adults and nymphs stripping corn border rows statewide. (U. Md., Ent. Dept.).

BANKS GRASS MITE (Oligonychus pratensis) - NEBRASKA - Heavy on corn in Mitchell Valley area, Scotts Bluff County. Leaf damage progressed up above ears. Controls applied. (Hagen). IDAHO - Collected from lower corn leaves on field margins at Castleford, Twin Falls County, August 2 and Shoshone, Lincoln County, August 3. Det. by J.L. Mellott. (Hopkins et al.).

SPIDER MITES - KANSAS - Heavy on lower leaves in Pratt County cornfield; leaf discoloration noticeable. (Simpson). WYOMING - Colonies remain small on corn plants in Goshen and Laramie Counties. "Burn" noted on bottom 3 leaves in 2 fields in Goshen County. (Parshall). COLORADO - Tetranychus urticae light to moderate on corn in State. (Johnson et al.).

SMALL GRAINS

RICE WATER WEEVIL (Lissorhoptrus oryzophilus) - CALIFORNIA - Adults medium on leaves of rice plants in 1,000-acre planting at Willows, Glenn County. (Cal. Coop. Rpt.).

A FLEA BEETLE (Chaetocnema sp.) - CALIFORNIA - Heavy on rice plantings at Holtville, Imperial County. (Cal. Coop. Rpt.).

TURF, PASTURES, RANGELAND

TWO-LINED SPITTLEBUG (Prosapia bicincta) - FLORIDA - First damage of 1968 occurred by July 24 on Bermuda grass at Range Cattle Station in Hardee County. Adults averaged about 4 per 20 sweeps and nymphs 4 per square foot. Adult numbers light by August 15, but nymphs per square foot averaged 17 in Pangola grass pastures currently held in reserve, 6 in grazed pastures, and less than 1 in pastures chopped in June or in grass removed for hay or silage in July or August. Damage to Pangola grass imminent when adult populations peak again. (Fagan).

CHINCH BUG (Blissus leucopterus) - ALABAMA - Heavy, damaged 2 St. Augustine grass lawns in Montgomery and Dallas Counties. (Thornton, Scarsbrock). NEW YORK - Still active in Nassau County lawns; bentgrass most affected. (N.Y. Wkly. Rpt., Aug. 19).

RED-LEGGED GRASSHOPPER (Melanoplus femurrubrum) - VIRGINIA - Adults heavy and feeding in some pastures in Rappahannock County. Ranged 7-13 per square yard, but grass not seriously damaged. (Allen, Lyne).

A BILLBUG (Sphenophorus phoeniciensis) - CALIFORNIA - Adults heavy on hybrid Bermuda grass at Manhattan Beach, Los Angeles County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Nymphs ranged 2-3 per crown in alfalfa in Milburn area, Johnston County, and in Hendrix and Yuba areas, Bryan County. Girdling stems and killing plants. Up to 80 percent of stems killed in some fields. Most alfalfa in these areas being cut. (Okla. Coop. Sur.). NEW MEXICO - Very abundant in alfalfa at Virden, Hidalgo County. Ranged 35-86 per sweep in 3 recently cut alfalfa fields. Lighter in uncut alfalfa. (Nielsen). Increasing in alfalfa near Hatch, Dona Ana County; averaged 5-8 per sweep. (Eubank). ARIZONA - Counts unchanged on alfalfa in Yuma, Pinal, and Maricopa Counties. (Ariz. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Adults light in Nottoway, Amelia, Powhatan, New Kent, Chesterfield, Hanover, and Cumberland Counties as of August 14. Adults currently light on ragweed, soybean, and/or red clover in Stafford, King George, Westmoreland, Richmond, Essex, King and Queen, and King William Counties. These 7 counties new county records. (Allen). ILLINOIS - Average per sweep on alfalfa, clover, and wheat stubble by district: Northwest 1.3, west 1.2, and central 0.6. (Ill. Ins. Rpt.). MISSOURI - Collected in red clover in Lincoln County for a new county record. (Munson).

PEA APHID (Acyrtosiphon pisum) - WYOMING - Ranged 50-900 (average 400) per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Parshall). COLORADO - Increased in alfalfa in Arkansas Valley; ranged 150-25,000 per 100 sweeps. Heaviest in Otero, Bent, and Prowers Counties. Stunting and yellowing noted in heavily infested fields. Light to moderate in southwest area. (Schweissing, Bulla). NEW MEXICO - Very light in Virden Valley alfalfa. (Nielsen).

LYGUS BUGS (Lygus spp.) - WYOMING - Nymphs and adults ranged 5-30 per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Parshall). COLORADO - Adults and nymphs ranged 0-200 per 100 sweeps in alfalfa in eastern area. (Johnson, Schweissing). UTAH - Lygus spp., L. elisus, and L. hesperus still numerous in many alfalfa seed fields throughout Millard County. Adults usually 70-90 percent of specimens. (Knowlton, Aug. 20). ARIZONA - Counts unchanged on Yuma County alfalfa. (Ariz. Coop. Sur.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WYOMING - Ranged 19-42 (average 31) per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Parshall). NEBRASKA - Averaged 8 per 20 sweeps in Polk County alfalfa field. (Keith, Jansen).

ALFALFA WEEVIL (Hypera postica) - MICHIGAN - Adults 10-23 and late instars 6-13 per 200 sweeps in 2 southern counties; adults result of late emergence. (Newman, Aug. 19). COLORADO - Larvae increasing in alfalfa in Pueblo and Crowley Counties; ranged 40-1,000 per 100 sweeps. Noneconomic in most fields. (Schweissing). WYOMING - Larvae 0-8 and adults 0-9 per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Parshall). OREGON - One late instar and 5 adults taken in 100 sweeps in mature alfalfa seed field near Keno, Klamath County, August 21. (Westcott).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MISSOURI - Adults taken from red clover in Jefferson County for a new county record. (Munson).

PEA LEAF WEEVIL (Sitona lineatus) - OREGON - Two adults taken in alfalfa field near Klamath Falls, Klamath County, week of August 9. (Schuh). This is a new county record. (Westcott).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - WYOMING - Adults 27-90 per 100 sweeps in 4 alfalfa fields in Goshen County. (Parshall). COLORADO - Adults 0-20 per 100 sweeps in alfalfa in Morgan and Logan Counties. (Johnson).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - WYOMING - Adults averaged 4 per 100 sweeps in 3 alfalfa fields in Goshen and Laramie Counties. (Parshall). COLORADO - Adults light, 0-2 per field, in alfalfa in northeastern area. (Johnson). NEBRASKA - Adults of this species averaged 4 and D. virgifera 1 per 20 sweeps in Polk County alfalfa field. (Keith, Jansen). VIRGINIA - Adults 100 per 100 sweeps in Amelia County alfalfa field. (Allen, Aug. 14).

ALFALFA CATERPILLAR (Colias eurytheme) - COLORADO - Larvae ranged 0-200 per 100 sweeps in alfalfa in Arkansas Valley. (Schweissing). VIRGINIA - Larvae 20 per 100 sweeps on Amelia County alfalfa. (Allen, Aug. 14).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Counts per 10 sweeps on alfalfa ranged 3-7 in central counties and 5-10 on Eastern Shore. (U. Md., Ent. Dept.).

BEE T ARMYWORM (Spodoptera exigua) - ARIZONA - Continues problem on Yuma County alfalfa. (Ariz. Coop. Sur.).

GRASSHOPPERS - ILLINOIS - Averages per square yard on alfalfa, clover, and wheat stubble by district: West - 4.4 in fields, 6.6 on margins; central - 3.4 in fields, 4.1 on margins; and northwest - 2.3 in fields, 4.1 on margins. (Ill. Ins. Rpt.).

STRAWBERRY SPIDER MITE (Tetranychus atlanticus) - CALIFORNIA - Heavy on alfalfa plantings at Visalia, Tulare County. (Cal. Coop. Rpt.).

SOYBEANS

GREEN CLOVERWORM (Plathypena scabra) - VIRGINIA - Larvae 20-100 per 100 sweeps in Cumberland, Hanover, Prince Edward, Nottoway, Amelia, and New Kent Counties as of August 14. Larval feeding confined to leaves and noneconomic. Currently most common species in soybeans. Larvae 50-100 per 100 sweeps in King George, Westmoreland, Richmond, Essex, King and Queen, and King William Counties. Damage continues to be noneconomic. (Allen). INDIANA - Little change noted in northern and central counties. Defoliation 10-15 percent in most heavily infested fields. Numbers generally noneconomic and decreasing. Larvae ranged from 1 per 5 row feet to 4 per foot in Spencer County; defoliation less than 15 percent. (Matthew). MICHIGAN - Collections at all stations remain low. Total of 17 moths taken in Montcalm County and 22 in Lenawee County. Situation not severe enough to cause more than individual field problems. (Janes, Newman, Aug. 19). MINNESOTA - Economic in southwest, south-central, and central districts; sprays applied in these districts. Fungus disease apparently reduced numbers in McLeod County. (Minn. Ins. Rpt.). IOWA - Another generation of larvae appearing in central and north-central areas. Nearly mature soybeans show little damage. (Iowa Ins. Sur.). NEBRASKA - Ranged 7-15 (average 10) per 25 sweeps in 3 fields surveyed in Seward, Butler, and Polk Counties. (Keith, Jansen).

NOCTUID MOTHS (Heliothis spp.) - ALABAMA - Larval feeding damage light to medium in some fields in Geneva County. (Smith).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - This species and Pseudoplusia includens caused much "ragging" of leaves in some fields in Geneva County. (Smith).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Earlier larval damage resulted in poor stand in several fields in Covington County, especially in dry areas. (Linder). SOUTH CAROLINA - Caused broken stalks in Hampton and Allendale Counties. (Thomas, Aug. 20).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Adults 60 per 100 sweeps in 20-acre field in New Kent County; generally very light in Cumberland, Hanover, Prince Edward, Nottoway, and Amelia Counties. (Allen, Aug. 14). SOUTH CAROLINA - Increasing, but well below 1967 level. (Thomas, Aug. 20). Controls applied in Clarendon County and effective in Dillon County. (Nettles, July Rpt.). INDIANA - Defoliating soybeans in Ripley County; controls in progress. (Lehker).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - MARYLAND - Adults damaged 10 percent of 60-acre stand near Centreville, Queen Annes County. (U. Md., Ent. Dept.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - NEBRASKA - Averaged about 2 per 25 sweeps in 3 fields in Seward County. (Keith, Jansen).

GRASSHOPPERS - MARYLAND - Melanoplus spp. damaged 10 percent of 15-acre field near Churchill and 40 percent of 5-acre stand near Ingleside, Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - M. femurrubrum nymphs and adults 75-100 per 100 sweeps in King George County field; damage light to moderate. (Allen).

PEANUTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Larvae heavy and widespread in Geneva County; damage evident on stems and in kernels. More serious than in many years in 9 major peanut counties in southeast area. (Smith et al.). Larval damage by this species and Feltia subterranea (granulate cutworm) very heavy in several large fields at Newville, Henry County. (Todd et al.). TEXAS - Medium to heavy and damaging peanuts in Waller County. Numbers fairly widespread in county. (Richardson, Green).

RED-NECKED PEANUTWORM (*Stegasta bosqueella*) - OKLAHOMA - Infested 50 percent of terminals in Greer County. (Okla. Coop. Sur.).

BURROWING STINK BUGS (*Pangaeus* spp.) - ALABAMA - Adults and nymphs very heavy and seriously damaged 7-acre field at Newton, Dale County; field with 3-year history of damage. Controls ineffective in 1968. (Estes et al.).

SPIDER MITES (*Tetranychus* spp.) - OKLAHOMA - Heavy in Perkins area, Payne County. (Okla. Coop. Sur.).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Weevil movement means young bolls will require protection at Florence. Larvae infested 0.9-29.7 percent of treated plots and 7-79 percent of untreated plots. Adults per 100 squares ranged 0-5 in treated plots and 0-17 in untreated plots. (Taft et al., Aug. 16). Peak migration passed. (Sparks, Aug. 20). ALABAMA - Continues heavy in central and southern areas; adults emerging from opening bolls. Egg laying heavy; 1-25 punctures noted in half-grown bolls where young weevils plentiful and squares about gone. Punctured squares increasing steadily in northern area; controls widespread in this area. First controls made in some fields in Madison County. Controls completed in some southern areas, especially in drought areas where cotton "cut-out." (McQueen). TENNESSEE - Migration to noninfested western area continues in regularly infested section as most early cotton no longer attractive to weevils. Boll damage heavy in late cotton. Square counts no longer necessary in southern tier of counties. Dry weather caused some mortality. Up to 6 weevils found in one bloom in Hardeman County. (Locke). MISSISSIPPI - Percent punctured squares averaged 7.8 (maximum 67) in 3 of 9 fields checked in delta counties. Infestations increased greatly, up to 91 percent, in test plots not treated past 10-14 days. (Pfrimmer et al.). ARKANSAS - Infested 4,808 (76.1 percent) of fields surveyed. Above treatment level in 1,446 fields. Percent punctured squares increasing in many fields due to decline in squaring rates. Treated 1,196 fields. (Boyer, Barnes). OKLAHOMA - Infestations averaged 24 percent and 54 percent in 2 fields checked in Otter Creek area, Tillman County. Infestations light in most fields, but up to 30 percent in few fields in Jackson County. Moderate in Bryan County and light in Caddo, Kiowa, and Garvin Counties. (Okla. Coop. Sur.). TEXAS - Damaging infestations found in 2 of 7 treated fields and in 4 of 8 untreated fields in McLennan and Falls Counties. Percent punctured squares ranged 2.5-32.5 (average 9) in treated fields and 4-40.5 (average 19.5) in untreated fields. (Cowan et al.). For Boll Weevil in High Plains see page 848.

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Larvae infested 0-19.3 percent of treated plots and 0-13.0 percent of untreated plots at Florence. Moths heavy in light trap during period. Collected 1,181 *H. zea* (4,801 to date) and 23 *H. virescens* (73 to date). (Taft et al., Aug. 16). Egg laying continues heavy; larval control excellent. (Sparks, Aug. 20). ALABAMA - Remains about same as last week. Heavier, 15-22 per 100 terminals, in some fields in Marengo and Talladega Counties. (McQueen). TENNESSEE - Serious damage continues over western area. Egg laying ceased in older cotton. Eggs and larvae ranged 1-18 per 100 terminals. More egg laying down in plant than in terminal buds. Damage expected to continue in rank cotton. (Locke). MISSISSIPPI - *H. zea* damaged squares averaged 1.1 (maximum 3.5) percent in delta counties. Flight increased over last week; more eggs found in many fields. (Pfrimmer et al.). ARKANSAS - Eggs and/or larvae in 3,733 (59.1 percent) of fields surveyed. Square damage in 4,161 (65.9 percent) of fields. Above 5 percent damaged squares (recommended treatment level) in 411 (6.5 percent) of fields. Small increase in eggs and larvae but square damage declined further, probably due to effective control and possibly infertile eggs and/or young larvae failing to become established. (Boyer, Barnes). Species determinations by county: Lee, 11 *H. zea* and 1 *H. virescens*; Lincoln, 22 *H. zea* and 3 *H. virescens*. Total to date 188 *H. zea* and 11 *H. virescens*. *H. zea* increased again in light trap in Desha County; 75

moths taken. Treated 840 fields; treated another 1,151 fields for bollworm and boll weevil. (Boyer). OKLAHOMA - Percent H. zea boll damage ranged 10-75 in Marshall County, 20-30 in Mangum area, Greer County, and 2-4 in Jackson and Tillman Counties. Generally light in Blaine, Caddo, Kiowa, and Garvin Counties. (Okla. Coop. Sur.). TEXAS - Most cotton past stage for damage in McLennan and Falls Counties. Damaging infestations in few remaining succulent fields. Eggs ranged 1.8-24.1 (average 14.6) and larvae 6-17 (average 11.7) per 100 terminals in 7 treated fields; eggs 1.8-37.5 (average 12.9) and larvae 7.5-21.8 (average 13.1) per 100 terminals in 8 untreated fields. Percent damaged squares ranged 6.7-19.0 (average 10) in treated fields and 8.4-24.2 (average 17.7) in untreated fields. Percent damaged bolls ranged 1.7-9.0 (average 3.6) in 9 treated fields and 4.2-16.5 (average 6.7) in 9 untreated fields. Of larvae previously collected on cotton, 85 percent determined H. virescens. (Cowan et al.). Remain light throughout High Plains. Light and scattered in Mitchell, Dawson, Lynn, Crosby, Garza, Martin, Yoakum, and Lubbock Counties. No control reported. (Almand, Aug. 20). NEW MEXICO - H. zea infested only occasional bolls in Hidalgo County. (Nielsen). ARIZONA - H. zea increasing in Yuma County; some controls applied. Still light in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Numbers generally decreased by virus disease at Florence. Moths greatly increased (1,263) in light traps; total to date 2,783. This increase indicates potential danger. (Taft et al., Aug. 16). TENNESSEE - Foliar damage low in west area; control not needed. Disease more effective than insecticides in heaviest infested fields. (Locke). MISSISSIPPI - Flight heavy in delta counties; larvae noted in most fields. (Pfrimmer et al.). TEXAS - Noted in scattered fields in Garza, Yoakum, and Lubbock Counties. (Almand, Aug. 20). Light in 4 fields and heavy in 1 in McLennan and Falls Counties. (Cowan et al.). ARIZONA - Disease aided by heavy rains and high humidity killed many larvae in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

A NOCTUID MOTH (Pseudoplusia includens) - TEXAS - Heavy in Maverick County. (Tapscott). ALABAMA - Larvae "ragging" leaves in many fields in central area; present in Jackson County. (McQueen).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Much damage to cotton in Yuma, Maricopa, and Pinal Counties. Controls very difficult, applied to heavily infested fields. (Ariz. Coop. Sur.).

PLANT BUGS - ARKANSAS - Averaged 40 or more per 100 terminals in 22 fields. Mostly nymphs of Lygus lineolaris and Neurocolpus nubilus in squares and on young bolls caused concern in extreme northeast area. Most of 63 fields treated in northeast area. (Boyer, Barnes). TEXAS - Psallus seriatus noted in Dawson, Martin, Garza, and Yoakum Counties; light to moderate in Floyd and Lubbock Counties. Numbers and damage of little concern at this time except in very young cotton and in cotton which has not fruited. (Almand, Aug. 20). ARIZONA - Lygus spp. remained heavy in late-planted fields and destroyed many squares in Maricopa and Pinal Counties. Controls not required. (Ariz. Coop. Sur.).

APHIDS - TENNESSEE - Becoming heavy in rank cotton in some fields in western area. (Locke). TEXAS - Aphis gossypii decreasing in Hale County due to parasites and predators. (Almand, Aug. 20).

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) - TEXAS - Heavy in northeast area. Excessive honeydew noted in many fields in Bowie and Red River Counties. Some controls applied. (Lynch, Moody).

SPIDER MITES - TENNESSEE - Damage to late cotton severe; conditions ideal for further increase in untreated fields. Infestations more severe and general in 1968 than in past 15 years in State. (Locke). SOUTH CAROLINA - Numerous heavy infestations in Piedmont counties. (Sparks, Aug. 20). ALABAMA - Damage by mostly Tetranychus urticae continues to increase in central and northern areas. Controls difficult. (McQueen). MISSISSIPPI - T. urticae decreased some in delta counties due to rains of last week, but increasing again with hot, dry weather.

(Pfrimmer et al.). TEXAS - Tetranychus cinnabarinus heavy in 1 field in Waco area. (Cowan et al.).

TOBACCO

CABBAGE LOOPER (Trichoplusia ni) - MARYLAND - Full-grown larvae caused heavy foliage damage to several acres near Sandgates, St. Marys County. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - INDIANA - Ranged 4-21 per leaf in fields surveyed in Jefferson County; controls required. (Matthew).

SUGARBEETS

BEET WEBWORM (Loxostege sticticalis) - COLORADO - Larvae of this species, Spodoptera exigua, and Ceramica picta caused leaf damage in Arkansas Valley; ranged 0-10 per 100 sweeps. (Schweissing).

MISCELLANEOUS FIELD CROPS

BANDED SUNFLOWER MOTH (Phalonia hospes) - NORTH DAKOTA - Larvae of this species and Homoeosoma electellum (sunflower moth) ranged up to 200 (average 50) per 100 heads on sunflowers in Cass, Traill, Grand Forks, Steele, and Barnes Counties. Fields infested ranged from 35 percent in Grand Forks County to 100 percent in Cass and Barnes Counties; 84 percent of larvae P. hospes. (Brandvik).

SUNFLOWER MAGGOT (Strauzia longipennis) - NORTH DAKOTA - Pupae in sunflower heads in 70 percent of fields examined in Cass, Traill, Grand Forks, Steele, and Barnes Counties; ranged 0-80 (average 26) per 100 heads. (Kaatz).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Trapped 25 females and 46 males in Lenawee County August 13; weekly total 122. Gradually reduced emergence expected next 14 days. Collected 43 moths during period in Montcalm County; peak collection 29. (Newman). First, second, and third instars infested some peppers in southern area. Control should be underway in northern pepper-growing areas. (Janes, Wells, Aug. 19). NEW JERSEY - Light to moderate in several pepper fields in southern area. Controls still warranted although blacklight trap collections declined past week. (Ins.-Dis. Newsltr.).

CABBAGE LOOPER (Trichoplusia ni) - RHODE ISLAND - Larvae heavy on potatoes in Washington County. (Field et al.). VIRGINIA - Moths continue high in light trap collections on Eastern Shore; larvae severe on peppers, tomatoes, and egg-plant. Egg counts very high. Situation will worsen if hot, dry weather continues. (Hofmaster, Aug. 14). COLORADO - Larvae 0-10 per 100 sweeps on tomatoes in Pueblo, Otero, and Prowers Counties. (Schweissing).

NOCTUID MOTHS - NEW JERSEY - Several species increased sharply in blacklight trap collections past week. Controls recommended on potatoes. Heliothis zea larvae light to moderate on tomatoes in southern counties. (Ins.-Dis. Newsltr.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - NEW JERSEY - Light to moderate on tomatoes in southern counties. (Ins.-Dis. Newsltr.). VIRGINIA - More numerous on potato at this time than since 1947 in Accomack County. (Hofmaster). SOUTH CAROLINA - Damaging late-planted potatoes in gardens in Dillon County; defoliation 50 percent in untreated plots. (Bauer).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - CALIFORNIA - Adults heavy on tomato fruit in plantings at Palermo, Butte County. (Cal. Coop. Rpt.).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Adults trapped on August 15-21: Cedarville, 70 on 4 stickyboards; Salem, 1 on 1 stickyboard; Vineland, 3 on 8 stickyboards. (Ins.-Dis. Newsltr.).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEBRASKA - Larvae heavy on field beans in Scotts Bluff, Morrill, and southern Sioux Counties. Controls applied to about 90 percent of fields last 2 weeks. (Hagen). MISSOURI - Damaging beans in northeast area. (Peters).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Damage light to 5 percent in 15-acre bean planting near Crumpton, Queen Annes County. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - NEW JERSEY - Larvae averaged 1 per row foot in several lima bean fields near Pole Tavern, Salem County. (Ins.-Dis. Newsltr.).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - RHODE ISLAND - Larvae on cabbage in Washington County. (Field et al.). NEW YORK - Very numerous in Suffolk County. (N.Y. Wkly. Rpt., Aug. 19). NEW JERSEY - Buildup rapid on most crucifers; satisfactory control difficult. Blacklight trap collections indicate increasing infestations. (Ins.-Dis. Newsltr.). VIRGINIA - Moths consistently high in light trap collections past 3 weeks on Eastern Shore. Larvae found severe on cucumbers and broccoli August 14; up to 25 eggs per broccoli leaf. Numerous young larvae destroyed by heavy rains in Exmore and Painter area August 9-10. Very little virus noted, but should appear shortly. (Hofmaster). MICHIGAN - Increased sharply at Montcalm County blacklight station. Collected 14 moths August 12; total of 41 August 8-12. (Newman). Very active; immediate controls needed in infested fields. (Janes et al., Aug. 19). WISCONSIN - Damaged untreated cabbage in many counties. (Wis. Ins. Sur.).

IMPORTED CABBAGEWORM (Pieris rapae) - WISCONSIN - Damage severe in gardens in few areas; defoliation 50 percent in untreated cabbage garden in northern Dane County. (Wis. Ins. Sur.). MICHIGAN - Very active; immediate controls needed in infested fields. (Janes et al., Aug. 19). RHODE ISLAND - Larvae on cabbage in Newport County; adults active. (Field, Kerr).

FLEA BEETLES - NEW JERSEY - Caused extensive injury to broccoli seedlings near Centerton, Cumberland County. (Ins.-Dis. Newsltr.). DELAWARE - Phyllotreta cruciferae numerous on young crucifers in New Castle County; some damage. (Burbutis).

CUCURBITS

CUCUMBER BEETLES - WISCONSIN - Acalymma vittatum and Diabrotica undecimpunctata howardi numerous and damaging cucumbers in few central areas. (Wis. Ins. Sur.).

MELON APHID (Aphis gossypii) - DELAWARE - Continues to increase on cucurbits throughout Kent and Sussex Counties. (Boys, Aug. 22).

GENERAL VEGETABLES

NOCTUID MOTHS - NEW JERSEY - Several species increased sharply in blacklight trap collections. Controls recommended on sweetpotatoes. (Ins.-Dis. Newsltr.). MICHIGAN - Crymodes devastator high at all blacklight stations, particularly in Montcalm County with 178 moths. Feltia spp. moths rapidly increasing; totaled 128 in Montcalm County and 110 in Lenawee County August 8-14. Weekly totals for 5 Euxoa spp. high at all 5 stations; ranged from 402 in Montcalm County to 104 in Newaygo County. Cutworms expected to be serious in 1969 if large numbers of Euxoa spp. persist through winter. (Newman).

VARIEGATED CUTWORM (Peridroma saucia) - WYOMING - Increased from 30 July 22-28 to 100 July 29-August 4 in blacklight trap in Goshen County. (Parshall).

ONION THRIPS (Thrips tabaci) - COLORADO - Up to 25 per plant on onions in eastern area. (Johnson, Schweissing)

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Medium numbers caused "wormy" apples at Lemon Grove, San Diego County. (Cal. Coop. Rpt.). COLORADO - Moths decreased in sex attractant traps in Mesa County. (Bulla). INDIANA - Trapped 54 males (59 last period) in virgin female traps at Vincennes orchard. (Dolphin, Aug. 19). NEW YORK - Increase in trap captures August 14 indicates summer-brood flight starting; small summer brood expected. (N.Y. Wkly. Rpt.). NEW JERSEY - Trapped 5 in bait jar in Gloucester County August 15-21. (Ins.-Dis. Newsltr.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Adults near peak activity, 89 in bait jars at Vincennes; part of flight appears to be fourth generation. (Dolphin, Aug. 19). NEW JERSEY - Trapped 3 in bait jar in Gloucester County August 15-21. (Ins.-Dis. Newsltr.).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Males in virgin female traps at Vincennes orchard increased from 203 to 307 as adults of second generation continued to emerge. (Dolphin, Aug. 19).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Trapped 356 males (546 last period) in virgin female traps at Vincennes. (Dolphin, Aug. 19).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Emergence continued. Trap collections highest during period August 3-20 at Bayfield, Baraboo, and Leland. (Wis. Ins. Sur.). NEW JERSEY - Average count per stickyboard by county August 15-21: Mercer 15, Gloucester 6.7, and Burlington 0. (Ins.-Dis. Newsltr.). NEW YORK - Fly emergence reached low level by August 4. (N.Y. Wkly. Rpt.). CONNECTICUT - False apple lures at Storrs catching 10 or 15 flies per day. Sex ratio close to 1:1; females could cause trouble. Most flies on lures hanging in late apple varieties. (Savos, Aug. 20).

MEALY PLUM APHID (Hyalopterus pruni) - CALIFORNIA - Medium on apricot trees at Meridian, Sutter County. (Cal. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - IOWA - Continued to increase at high rate on apple trees where poor control measures practiced. (Iowa Ins. Sur.). INDIANA - Increased in peach trees at Vincennes due to curtailed spraying during harvest. (Dolphin, Aug. 19). Increased on apple trees at Lafayette, Tippecanoe County, and generally throughout State due to favorable weather. Repeat controls necessary on poorly sprayed bronzed trees in well-sprayed orchards in southeast counties. (Matthew). OHIO - Increased in northeastern area; some bronzing apparent. Up to 30 per leaf on apple trees in untreated control check plots in Wayne County. (Forsythe). DELAWARE - Under control in most commercial apple plantings. (Boys, Aug. 22). CONNECTICUT - Easily found in most orchards. Weather favors development; rapid increase expected. (Savos, Aug. 20).

SPIDER MITES - COLORADO - Tetranychus urticae outbreaks severe in apple orchards in Mesa and Delta Counties; up to 200 per leaf. Foliage injury apparent; 2-3 sprays necessary in many cases. Overwintering forms abundant at base of trees. (Bulla). MINNESOTA - Development of unspecified spider mites appears rapid during recent hot weather; sporadic, heavy outbreaks common in apple orchards in various areas. (Minn. Ins. Rpt.). INDIANA - Tetranychus spp. buildup statewide due to favorable weather; repeat controls required in most orchards. (Matthew). OHIO - T. urticae increased to economic proportions on apple foliage in 2 Columbiana County orchards. (Forsythe). CONNECTICUT - Tetranychus spp. easily found in most orchards. Weather favors development; rapid increase expected. (Savos, Aug. 20).

PECAN WEEVIL (Curculio caryae) - ALABAMA - About 90 percent of nuts shed from 3 large Schley pecan trees in large orchard in Dallas County; feeding punctures on about 40 percent of these nuts. Several adults collected under trees following treatments. (Beers et al.). OKLAHOMA - Averaged 6 per pecan limb in favorable areas in Payne County; none in other areas. Emergence continues in moist bottom land areas and recently cultivated fields. Some emergence noted in Lincoln County. (Okla. Coop. Sur.).

WALNUT CATERPILLAR (Datana integerrima) - OHIO - Defoliated 70 percent of 50-60 percent of walnut trees in area of Preble County (Mooter); defoliated up to 100 percent of roadside walnut and hickory trees in Medina County (Custer, Basinger). ALABAMA - Several hundred larvae feeding on large pecan trees in Lee County. (McQueen).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Young larvae continue to enter pecan shucks throughout southern and central areas; partly responsible for heavy nut "drop." "Drops" noted especially in Lee, Wilcox, Mobile, Baldwin, Crenshaw, and Dale Counties. (Estes et al.).

AMERICAN PLUM BORER (Euzophera semifuneralis) - CALIFORNIA - Heavily damaged young almond trees at Wheatland, Yuba County; larvae feeding under bark and girdling young limbs. Orchard damaged by wind earlier this season. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Ranged up to 50 per trap at Medford, Jackson County. (Berry). One in trap at Garden Valley, Douglas County; first fly taken in area this season. One each in 2 traps at Molalla and Estacada, Clackamas County. (Larson). Clackamas County is a new county record. (Westcott).

APHIDS - ALABAMA - Monellia spp. heavy and serious in Lowndes County pecan orchards. (Mathews). CALIFORNIA - M. costalis heavy on pecan trees at Woodland, Yolo County. Adults also on crapemyrtle. Chromaphis juglandicola medium on English walnuts at Woodland, Yolo County. (Cal. Coop. Rpt.).

CITRUS

Citrus Insect Situation in Florida - Mid-August - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 78 percent of groves (norm 56 percent); 64 percent economic (norm 41 percent). Summer population peaked early in August at very high level and much above normal. Heavier on fruit than on leaves. Decrease expected. All districts in high range. TEXAS CITRUS MITE (Eutetranychus banksi) infested 47 percent of groves (norm 46 percent); 26 percent economic (norm 21 percent). Near normal and in moderate range; decrease to low range expected. Highest districts west and central. CITRUS RED MITE (Panonychus citri) infested 39 percent of groves (norm 45 percent); 15 percent economic (norm 24 percent). Below normal and in low range; further decrease expected. Highest district west. BLACK SCALE (Saissetia oleae) infested 79 percent of groves (norm 66 percent); 64 percent economic (norm 44 percent). Still high in all districts but decreasing; expected to drop to moderate range by September. Highest districts central, east, and west. GLOVER SCALE (Lepidosaphes gloverii) infested 61 percent of groves (norm 60 percent); 1 percent economic (norm 18 percent). PURPLE SCALE (L. beckii) infested 42 percent of groves (norm 58 percent); less than 1 percent economic

(norm 4 percent). CHAFF SCALE (Parlatoria pergandii) infested 22 percent of groves (norm 54 percent); less than 1 percent economic (norm 5 percent). YELLOW SCALE (Aonidiella citrina) infested 50 percent of groves (norm 56 percent); less than 1 percent economic (norm 8 percent). An ARMORED SCALE (Unaspis citri) infested 15 percent of groves; 4 percent economic. Except for U. citri, preceeding 4 armored scales below normal and in moderate or low range in all districts; little change expected. MEALYBUGS infested 69 percent of groves; 15 percent economic. Population moderate and slightly above normal; decrease expected. WHITEFLIES infested 45 percent of groves; 25 percent economic. Population near normal and moderate; decrease expected. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

A LEAF ROLLER MOTH (Platynota stultana) - ARIZONA - Causing serious injury in nurseries, perhaps due to weather; controls required in Yuma County. (Ariz. Coop. Sur.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Injured young growth in Yuma County groves. (Ariz. Coop. Sur.).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Medium on trees at Greenbrae, Marin County. (Cal. Coop. Rpt.).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Fruit protection required in Yuma County. (Ariz. Coop. sur.).

SMALL FRUITS

AN APHID (Capitophorus ribis) - CALIFORNIA - Heavy on currant plants at Bieber, Lassen County. (Cal. Coop. Rpt.).

SPIDER MITES - MINNESOTA - Development appears rapid in recent hot weather; sporadic, heavy outbreaks common in various areas on strawberry plants. (Minn. Ins. Rpt.).

ORNAMENTALS

ARMORED SCALES - FLORIDA - Fiorinia theae found severe on all of 1,300 Chinese holly plants at Leesburg, Lake County, August 14. (Bentley). Pseudaonidia clavigera found severe August 16 on 700 of 876 camellia plants at Springhead, Hillsborough County. (Vaughan).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - VIRGINIA - No increase in beetle activity evident except in Mecklenburg County where 6 new infestations reported during July. (For. Pest Sur. Rpt.).

GELECHIID MOTHS - MICHIGAN - Exoteleia nepheos collected at Jenison, Ottawa County, for third known infestation in State. Noted at West Olive, Ottawa County, this summer and at Bellville, Wayne County, in 1966. (Wallner, Aug. 19). MINNESOTA - Recurvaria sp. heavily infested many spruce trees in home plantings and some in nurseries. (Minn. Ins. Rpt.).

COOLEY SPRUCE GALL APHID (Adelges cooleyi) - WYOMING - Heavy on Colorado spruce at Laramie, Albany County; emergence of early August continues. (Burkhardt).

AN ARMORED SCALE (Fiorinia externa) - MARYLAND - Found on hemlock planting near Chestertown, Kent County, August 19, 1968. Collected and det. by W.T. Garrett. This is a new county record. (U. Md., Ent. Dept.).

SPRUCE BUD SCALE (Physokermes piceae) - CALIFORNIA - Heavy on spruce trees at Greenbrae, Marin County. (Cal. Coop. Rpt.).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - ARKANSAS - Collected on trees and shrubs in Garland County July 22 by G. Barnes for new State record. Det. by R.E. Warner. (Rouse, Boyer). ALABAMA - Adults heavy and annoying about houses in Cleburne County; no damage to trees or shrubs. (Ventress).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NEVADA - Infestation and damage on elms above normal in Clark County, especially at Henderson. (Earnist).

ELM LEAF BEETLE (Pyrrhalta luteola) - UTAH - More damaging at Fillmore, Millard County, than in western part of county. (Knowlton, Aug. 20). TEXAS - Larvae still heavy, severely damaging elms in Upton County. (Neeb).

LOCUST LEAF MINER (Xenochalepus dorsalis) - VIRGINIA - Moderate to heavy on locust trees in Montgomery, Roanoke, Botetourt, Bedford, and Campbell Counties. (Allen, Aug. 13).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Minor problem on shade trees at Santa Fe, Santa Fe County. (Heninger). WISCONSIN - Caused slight damage to variety of trees in several counties. (Wis. Ins. Sur.). OHIO - Webbing common through central to eastern counties. Defoliation of various deciduous trees heavy this year. Larval numbers appear near seasonal peak. (Rose).

MIMOSA WEBWORM (Homadula anisocentra) - IOWA - Collected on honeylocust south of Kelly, Story County, for a new county record. (Iowa Ins. Sur.). OKLAHOMA - Leaf damage ranged 5-85 (average 40) percent on several mimosa trees at Inola, Rogers County. Heavy on mimosa in Mayes County. (Okla. Coop. Sur.). ALABAMA - Heavy, damaged about 25 percent of leaves on several mimosa trees at trailer court in Decatur, Morgan County. (Cain). WEST VIRGINIA - Common on honeylocust in north-eastern counties. (Weaver, Aug. 16).

BIRCH LEAF MINER (Fenusa pusilla) - WISCONSIN - Damage heavy in Marathon, Sheboygan, Calumet, Portage, and portions of Dane County. Less numerous but damaging in Chippewa and Eau Claire County area. (Wis. Ins. Sur.).

A LEAFHOPPER (Japananus hyalinus) - OREGON - Late instars and adults common on ornamental maple at Corvallis, Benton County, August 5. Det. by P.W. Oman. Previously recorded in State from Portland only. (Oman). This is a new county record. (Westcott).

PSYLLIDS - CALIFORNIA - Psylla uncatoides heavy on acacia trees at Seaside, Monterey County. One of worst pests of acacia in State. Trioza alacris nymphs, adults, and honeydew drip heavy; severely deformed foliage on bay trees on Governor's Mansion grounds at Sacramento, Sacramento County. (Cal. Coop. Rpt.).

MAN AND ANIMALS

MOSQUITOES - NEW JERSEY - Eastern viral encephalitis present in horses in central and southern counties. Owners throughout State urged to immunize all equines immediately. Spraying for mosquitoes urged. (Ins.-Dis. Newsltr., Aug. 16). MARYLAND - Eastern viral encephalitis found in pheasants in Worcester and Wicomico Counties. Mosquito annoyance to man light. (U. Md., Ent. Dept.). TENNESSEE - Mosquitoes very troublesome at dusk in many eastern areas. (Quillin). MICHIGAN - Continued at high level. Fogging becoming effective. (Janes, Aug. 19). WISCONSIN - Hot weather increased activity. Biting not as bothersome as earlier in summer, but sometimes severe in localized areas near marshes and woods. Aedes vexans most numerous biter and A. sticticus second, according to collection made on far west side of Madison. Frequent rains and warm weather favored breeding; population should continue at about present level or increase slightly in next 2 weeks. Severely annoyed cattle in some areas of Jefferson County. (Wis. Ins. Sur.). MINNESOTA - Catches in 16 light traps decreased to 6,940 females and 6,450 males August 10-16 with 5,368 A. vexans, 132 Culex tarsalis, and 331 (unusually high) Culiseta morsitans. Of 775 larval collections August 11-17, A. vexans in 511, Culex territans in 227, C. tarsalis in 96, C. restuans in 71, and C. pipiens in 36. High pond levels during summer encouraged permanent water breeders. A. vexans, A. trivittatus, and A. cinereus dominated evening and day-time bite collections August 11-17. Light trap catches and annoyance increased greatly during hot, humid weather of August 18-23; many new adults. This brood will assure many areas a substantial number of mosquitoes for Labor Day weekend. (Minn. Ins. Rpt.). UTAH - Continue moderate in Delta, Deseret, and Abraham area of western Millard County. (Knowlton, Aug. 20).

SCREW-WORM (Cochliomyia hominivorax) - Total of 221 cases reported in U.S. August 11-17 as follows: TEXAS - Aransas 1, Atascosa 12, Bee 11, Brewster 8, Brooks 17, Crockett 7, Culberson 1, De Witt 5, Duval 1, Edwards 2, Frio 1, Glasscock 1, Goliad 4, Hidalgo 5, Howard 1, Jeff Davis 4, Jim Hogg 14, Jim Wells 4, Karnes 5, Kerr 2, Kenedy 4, Kimble 5, Kleberg 2, Live Oak 6, Mason 4, Maverick 1, Midland 1, Nueces 3, Pecos 19, Presidio 1, Real 2, Reeves 1, Refugio 3, San Patricio 4, Starr 14, Terrell 19, Uvalde 2, Val Verde 10, Willacy 1, Wilson 3; ARIZONA - Greenlee 1, Yavapai 4; CALIFORNIA - San Diego 1; NEW MEXICO - Grant 1, Hidalgo 3. Sterile screw-worm flies released: Texas 74,618,000; New Mexico 1,280,000; Arizona 8,360,000; Mexico 67,390,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - OREGON - Averaged 5-10 per face in small herds near Brownsboro, Jackson County. (Westcott). IDAHO - Annoying range and pasture cattle in several widely separated areas during late July and early August. Not economic in many areas during summer of 1968. Some hot spots troublesome by mid-June and persisted during July and early August. Cool, wet weather last 2 weeks will depress numbers to noneconomic levels throughout State. Adults will be searching for hibernation sites next few weeks. (O'Keefe). SOUTH DAKOTA - Up to 25-30 per face on cattle south of Geddes, Charles Mix County. Averaged 5 per face on untreated cattle in northwestern Yankton County. (Balsbaugh, Jones). MISSOURI - Averaged 3.8, 10.6, 2.5, 0.2, 0.8, 3.5, and 6.8 per face (10-cow samples) on 7 central area herds. (Thomas). WISCONSIN - Slightly to moderately annoyed cattle in most areas. (Wis. Ins. Sur.). MICHIGAN - Particularly numerous because of rains. (Janes, Aug. 19). OHIO - High in all areas as indicated by tightly clustered cattle throughout State past 2 weeks. (Rose). WEST VIRGINIA - Ranged 15-40 (averaged 26) per face on adult cattle. (Dorsey, Aug. 16).

HOUSE FLY (Musca domestica) - UTAH - Troublesome in most central and eastern communities and on farms. (Knowlton, Aug. 20). TENNESSEE - Very annoying in houses and around patios in many areas. (Quillin). WISCONSIN - Numerous around homes, restaurants, and barns in all areas. (Wis. Ins. Sur.). MICHIGAN - Particularly numerous because of rains. (Janes, Aug. 19). RHODE ISLAND - All stages heavy in chicken houses in Washington County. (Field).

LITTLE HOUSE FLY (Fannia canicularis) - RHODE ISLAND - Heavy in Washington County chicken houses. (Field).

HORN FLY (*Haematobia irritans*) - TEXAS - Heavy on Crockett County livestock. (Neeb). OKLAHOMA - Heavy on cattle in Garvin and Mayes Counties; moderate in Ellis and Kiowa Counties. (Okla. Coop. Sur.). MISSOURI - Averaged 161.0, 557.5, 362.5, 227.0, 220.0, 0.7, and 229.8 per head (10-cow samples) on 7 central area herds. (Thomas). WISCONSIN - Severely annoyed cattle in Jefferson County; annoyed cattle slightly to moderately in most other counties. (Wis. Ins. Sur.). MICHIGAN - Particularly numerous because of rains. (Janes, Aug. 19). WEST VIRGINIA - Ranged 20-100 (averaged 49) per square foot of withers on adult cattle. (Dorsey, Aug. 16).

STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Annoyance to cattle moderate to severe in most sections. Hot weather increased activity and contributed to discomfort of cattle. (Wis. Ins. Sur.).

TABANID FLIES - UTAH - Annoyance to livestock in Uintah and Duchesne Counties decreasing. Troublesome in many areas this season. (Knowlton, Aug. 20). TEXAS - *Tabanus* sp. heavy on livestock in salt marsh area. (Sanders). OKLAHOMA - *Tabanus* spp. heavy on livestock in Choctaw County. *T. atratus* up to 40 per head in favorable areas of Johnston County. (Okla. Coop. Sur.). WISCONSIN - Deer flies continued to annoy cattle and humans in many locations. (Wis. Ins. Sur.).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - ALABAMA - Live specimen collected from bathtub in home at Sheffield, Colbert County. (Baswell, Foster).

HOUSEHOLDS AND STRUCTURES

ORIENTAL WOOD BORER (*Heterobostrychus aequalis*) - FLORIDA - Total of 2 larvae, 1 pupa, and 13 adults taken from oak wood flooring at construction company in Coral Gables, Dade County, June 25. (Weaver, Creamer).

A LONG-HORNED BEETLE (*Xylotrechus nauticus*) - CALIFORNIA - Adults heavy in several buildings at Santa Maria, Santa Barbara County. (Cal. Coop. Rpt.).

AN ANT (*Paratrechina melanderi arenivaga*) - CALIFORNIA - Infested residence at Redding, Shasta County, for a new county record. (Cal. Coop. Rpt.).

MISCELLANEOUS WILD PLANTS

A PLANT BUG (*Melanotrichus virescens*) - OREGON - Specimens collected in Tillamook and Hood River Counties in 1961. This is a new State record. Collected on Scotch broom at Reedsport, Douglas County, August 3, 1968, for a new county record. All determinations made by J.D. Lattin. Species reportedly abundant at Vancouver in British Columbia, Canada, in 1959. (Lattin, Westcott).

BENEFICIAL INSECTS

LADY BEETLES - UTAH - Effectively controlled spotted alfalfa aphid and pea aphid in many alfalfa hay and seed fields in greater Delta area of Millard County. (Knowlton, Aug. 20). WYOMING - Adults and larvae averaged 12 per 100 sweeps on Goshen and Laramie County alfalfa. (Parshall).

GREEN LACEWINGS (*Chrysopa* spp.) - WYOMING - Adults ranged 4-33 (averaged 15) per 100 sweeps on Goshen and Laramie County alfalfa. (Parshall).

DAMSEL BUGS (*Nabis* spp.) - WYOMING - Nymphs and adults ranged 9-190 (average 61) per 100 sweeps on Goshen and Laramie County alfalfa. (Parshall).

BIG-EYED BUGS (*Geocoris* spp.) - UTAH - Very numerous, often 50-100 in 10 sweeps; effectively controlled spotted alfalfa aphid and pea aphid in large alfalfa field at Delta, Millard County. (Knowlton, Aug. 20).

A BRACONID (Apanteles congregatus) - VIRGINIA - Heavily parasitized Manduca spp. (hornworms) in 10-acre tomato field in Westmoreland County. Nearly every plant with 2 or more hornworms. About 60 percent of hornworms parasitized. (Allen, Ptucha).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Traps checked in El Paso area with negative results for July. Additional traps set from El Paso to north of Presidio; no "native" weevils found in these traps. One larva found north of Presidio. Additional traps placed in High Plains area. Efforts being made to coordinate catches and field survey in order to determine area to be treated. (PPC South. Reg.). In High Plains, numbers and damage light in some fields in Martin County. Numbers light to medium in parts of Mitchell and Garza Counties. Infested 90+ percent of fields surveyed in Kent County; economic in about 25 percent of fields surveyed. Numbers and damage increasing. Generally increasing, infested almost all fields in Dickens County. (Almand, Aug. 20). See page 838 for Boll Weevil in other areas.

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Trapped 2 males and 8 females at St. Augustine, St. Johns County, August 19 for a new county record. (Taylor). Larvae taken from several varieties of mango in dooryards at Miami, Dade County, during recent weeks. (DeHaven). Larvae infested pear fruit at or near Mt. Dora, Lake County, July 25. (Williams). High in trap collections in Broward County; much fewer in traps in Dade County. (PPC South. Reg., July Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Biological Control Zone - Inspections made of 52,838 trees on 826 acres in municipios of Hidalgo, Guemez, and Padilla, Tamaulipas; 56 trees on 180 acres found infested at Hualahuises. Chemical Control Zone - Inspections made of 35,275 trees on 1,776 properties with 593 acres in seven municipios of Nuevo Leon and eight municipios in Tamaulipas. Inspections in northern Tamaulipas negative. Total of 347 trees found infested on 13 properties with 430 acres in municipios Linares and Hualahuises in Nuevo Leon. Inspections negative on 704 trees on 45 properties in municipios San Luis R.C. and Hermosillo, Sonora. (PPC Mex. Reg., July Rpt.).

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - Collected in Orange (July 5), Ulster (July 18), Chautauqua (July 9), and Steuben (July 16) Counties for new county records. Extensions reported in 8 counties. (PPC East. Reg.).

GRASSHOPPERS - TEXAS - Total of 42,919 acres treated in east-central Briscoe and northeast Floyd Counties July 9-14; control results excellent. (PPC South. Reg.). Hippiscus sp. heavy on Coastal Bermuda grass in Pecos County. (Neeb). IOWA - Melanoplus femurrubrum adults averaged 9 per square yard in 4 pastures in Lucas and Monroe Counties. (Iowa Ins. Sur.). WISCONSIN - Low on all croplands. Mixed populations of up to about 50 (average less than 20) per square yard on roadsides and grass fields. Late instars and adults of M. femurrubrum common; Dissosteira carolina, katydids, and Chorthippus sp. also common in grass. M. femurrubrum feeding damage very slight in margins of few cornfields. (Wis. Ins. Sur.). MINNESOTA - Adult survey started. Economic (10 or more per square yard) in widely scattered areas of Carver, Sherburne, Isanti, Morrison, Todd, Cass, Crow Wing, Chippewa, Swift, Big Stone, Hubbard, Otter Tail, and Becker Counties. Severe feeding damage (36-38 per square yard) on grassland in Otter Tail, Becker, and Hubbard Counties. Margin feeding on soybeans becoming severe in some Chippewa and Swift County fields. Low so far in southwest district. (Minn. Ins. Rpt.). NORTH DAKOTA - Adult survey completed in State. Infestations below 1967 level and lightest since 1961. Light only in parts of Cass, Richland, Ransom, Grant, Morton, and Emmons Counties. Generally noneconomic in remainder of State; occasionally light to threatening in alfalfa and soil bank fields. (Brandvik). MONTANA - Economic in Rosebud, Powder River, Yellowstone, and Stillwater Counties; damage minimized due to excellent stands of range grass. Damaged 10 percent of grama and western wheatgrass in southern Rosebud County. Heavy in parts of Custer National

Forest and Northern Cheyenne Indian Reservation during July; no controls applied. (PPC West. Reg.).

GYPSY MOTH (*Porthetria dispar*) - PENNSYLVANIA - Taken in Lebanon (July 25), Lehigh (July 26), Montgomery (July 29), and Lancaster (August 1) Counties for new county records. Moths recovered in Berks, Bucks, Carbon, Chester, Luzerne, Monroe, Northampton, Pike, Schuylkill, and Wayne Counties. (PPC East. Reg.).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Adults taken from garbage can and house at Winter Haven, Polk County, August 15. (Schmidt). GEORGIA - Aerially treated 291,847 acres during July. LOUISIANA - Aerial treatment completed on 691,600 acres in Shreveport area July 25; about 29,000 acres treated by farmers during July. TEXAS - Aerial treatment completed July 25 on 45,904 acres in Harrison County and on 77,136 acres in Panola County. (PPC South. Reg.).

JAPANESE BEETLE (*Popillia japonica*) - SOUTH CAROLINA - Collected for first time in Lancaster County June 29 and Anderson County July 17. NORTH CAROLINA - Few heavy infestations in Lumberton district. (PPC South. Reg.). VIRGINIA - Swept 25 per 100 sweeps in New Kent County soybean field. (Allen, Aug. 14). MARYLAND - Adults damaged about 20 percent of 65-acre soybean stand near Sudlersville, Queen Annes County. (U. Md., Ent. Dept.). NEW JERSEY - High on ornamentals at Kendall Park, Somerset County. (Ins.-Dis. Newsltr.). OHIO - Collected in Putnam County July 22, 1968, for a new county record. KENTUCKY - Collected in Grant (July 8), Christian (July 12), Leslie (July 18), and Menifee (August 12) Counties for new county records. (PPC Cent. Reg.). INDIANA - Collected in Lawrence (July 22), Hendricks (July 24), and Tipton (August 19) Counties for new county records. (PPC).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - ARIZONA - Trapping continued during July in Pima and Santa Cruz Counties; no suspicious specimens recovered. (PPC West. Reg., July Rpt.). MEXICO - In municipio Tijuana, Baja California, 1,278 inspections made of 350 traps. Marked sterile flies trapped totaled 4,406 females and 2,863 males. Total of 9 "native" flies (6 females and 3 males) taken this season as of July 31. Trapping for *A. ludens* negative in municipios Tecate and Ensenada, Baja California. (PPC Mex. Reg.).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - In Imperial County: Total of 2,945 moths trapped in July in Imperial Valley; total to date 5,555. Boll infestations averaged 16.8 percent, above normal for time of year. Trapped 144 moths during July in Bard Valley; total to date 185. Boll infestations nearing 9 percent. In Riverside County: Moth collections and boll infestations increased sharply in July in Palo Verde Valley; 4,319 moths trapped, boll infestations averaged 8-23 percent. Trapped 346 moths during July in Coachella Valley; total to date 359. Boll infestations ranged from trace to 2.2 percent. In Kern County: Bloom survey begun June 24, completed July 15. Blooms randomly checked on 37,254 acres. Total of 21,000 acres surveyed since July 16. Inspected 47,477 bolls throughout survey area during first 2-week period. (PPC West. Reg.). NEVADA - Total of 6 males collected in sex lure traps in Moapa Valley, Clark County, August 8 for first time in 1968. Additional males collected August 12 (2), August 14 (1), and August 19 (2). Cotton not grown in Moapa Valley in 1967 and all volunteer plants plowed under; about 40 acres cultivated in 1968. Adult surveys continue negative in Pahrump Valley, Nye County. (Bell, Yamashita). ARIZONA - Continued problem in Yuma County in untreated and some treated fields. Infestations spotted in Maricopa County. Still low in Pinal County. Exit holes ranged 8-10 per 100 bolls in Graham County. (Ariz. Coop. Sur.). NEW MEXICO - No larvae found during green boll inspections in Animas Valley and Virden Valley, Hidalgo County; 300 bolls examined. (Nielsen). TEXAS - Very little infestation during bloom and green boll inspections throughout southeastern and east-central areas; negative during limited lint cleaner inspections in Rio Grande Valley. (PPC South. Reg., July Rpt.).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - ARKANSAS - Collected in Conway County August 14, 1968, for a new county record. (PPC South. Reg.). TENNESSEE - Taken in Henderson County August 20 and Hardin County August 21 for new county records. (PPC). NORTH CAROLINA - Damage severe in many fields; especially heavy at Elizabeth City. (PPC South. Reg., July Rpt.).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - LOUISIANA - Collected at Gilbert, Franklin Parish, July 9, 1968, for a new parish record. Reported for first time in many years in light trap in St. Tammany Parish. (PPC South. Reg.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - LOUISIANA - *G. peregrinus* collected in Calcasieu Parish August 7 and in Evangeline Parish August 15 for new parish records. MISSISSIPPI - *G. peregrinus* collected in Lowndes County August 8 and in Clay County August 20 for new county records. (PPC). VIRGINIA - Two new finds made in city of Norfolk and one in city of Hampton; both adjacent to previously infested areas. (PPC East. Reg., July Rpt.).

HAWAII INSECT REPORT

Corn - TUMID SPIDER MITE (*Tetranychus tumidus*) remains heavy in all sweet corn fields on Oahu; problem during harvest. (Funasaki).

Turf, Pasture - Adults of a GRASS WEBWORM (*Herpetogramma licarsisalis*) heavy in spots on Kikuyu grass and other grasses near Hana and around lights at Makawao, Maui; larvae generally light. Parasitized eggs and larval parasites common in many areas. (Miyahira).

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) larvae generally light in seedling beans on Oahu due to removal and destruction of heavily infested seedlings and/or increased controls. Larvae light to medium on leaf petioles and adults light on foliage of older long beans and snap beans in scattered areas. (Funasaki). LEAF MINER FLIES (*Liriomyza* spp.) and a SPIDER MITE, (*Tetranychus cinnabarinus*) remain severe on snap beans, tomatoes, and cucumbers in all lowland areas on Oahu. Generally light to medium on eggplant, daikon, long beans, and watermelon. (Sato, Yamamoto).

Fruit Trees - CHINESE ROSE BEETLE (*Adoretus sinicus*) adult foliar damage heavy on 50 plots of rose, grape, and apple at Makawao and Pukalani, Maui. (Miyahira). COTTONY-CUSHION SCALE (*Icerya purchasi*) moderate to heavy on mulberry at Waiakea, Hawaii Island. (Yamamoto).

Ornamentals - Adults of a PLATASPID BUG (*Coptosoma xanthogramma*) remain heavy with numerous eggs laid on foliage of various ornamental plants at Poipu, Kauai. *Trissolcus* sp. (a scelionid wasp) parasitized 80 percent of eggs in area. In Wailua, Maui, eggs and adults of *C. xanthogramma* heavy on terminals of fig; adults covered mature and immature fruits and leaf stems; eggs abundant on leaves. (Sugawa, Miyahira).

Miscellaneous Insects - Nymphs and adults of a RHOPALID BUG (*Jadera haematoloma*) remain heavy on balloon vine (a weed) near airport and Waipahu, Oahu. Surveys negative in other areas. (Funasaki).

Weather continued from page 830.

seasonably hot weather persisted from the central and southern Great Plains to the Atlantic Ocean. Pickstown, South Dakota, registered 100° or higher on several afternoons and maximums at Columbia, South Carolina, averaged 101°. Last week was the hottest week of the year in South Carolina, the hottest since mid-June 1966 in Kentucky, the hottest since 1955 in Pennsylvania, and since 1954 in North Carolina. Dew point temperatures exceeded 70° over much of the Central and East. The persistence of the combination of high temperature and high humidity made the weather especially uncomfortable to the people whose work kept them out of doors. The front moved across the East over the weekend and temperature and humidity dropped to comfortable levels. (Summary supplied by Environmental Data Service, ESSA.).

INSECT DETECTION

New State Records

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - ARKANSAS - Collected in Garland County July 22, 1968, by G. Barnes. Det. by R.E. Warner. (p. 845).

A PLANT BUG (Melanotrichus virescens) - OREGON - First collected in 1961 in Tillamook and Hood River Counties. Det. by J.D. Lattin. (p. 847).

New County and Parish Records

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Logan, Mason, Adams, and De Kalb Counties. (p. 833).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Clay, Polk, Platte, and Greeley Counties. (p. 834).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Stafford, King George, Westmoreland, Richmond, Essex, King and Queen, and King William Counties. MISSOURI - Lincoln County. (p. 835).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MISSOURI - Jefferson County. (p. 836).

PEA LEAF WEEVIL (Sitona lineatus) - OREGON - Klamath County. (p. 836).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Clackamas County. (p. 843).

MIMOSA WEBWORM (Homadaula anisocentra) - IOWA - Story County. (p. 845).

AN ARMORED SCALE (Fiorinia externa) - MARYLAND - Kent County. (p. 845).

A LEAFHOPPER (Japananus hyalinus) - OREGON - Benton County. (p. 845).

AN ANT (Paratrechina melanderi arenivaga) - CALIFORNIA - Shasta County. (p. 847).

A PLANT BUG (Melanotrichus virescens) - OREGON - Douglas County. (p. 847).

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - St. Johns County. (p. 848).

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - Orange, Ulster, Chautauqua, and Steuben Counties. (p. 848).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Lebanon, Lehigh, Montgomery, and Lancaster Counties. (p. 849).

JAPANESE BEETLE (Popillia japonica) - SOUTH CAROLINA - Lancaster and Anderson Counties. OHIO - Putnam County. KENTUCKY - Grant, Christian, Leslie and Menifee Counties. INDIANA - Lawrence, Hendricks, and Tipton Counties. (p. 849).

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Henderson and Hardin Counties. ARKANSAS - Conway County. (p. 850).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - LOUISIANA - Franklin Parish. (p. 850).

WHITE-FRINGED BEETLES (Graphognathus spp.) - SOUTH CAROLINA - G. leucoloma fecundus in Dorchester County July 8, 1968. Serious damage reported in CEIR 18(30):712. (PPC). LOUISIANA - G. peregrinus in Calcasieu and Evangeline Parishes. MISSISSIPPI - G. peregrinus in Lowndes and Clay Counties. (p. 850).

LIGHT TRAP COLLECTIONS

	Temp- ature F.	Precip- itation (inches)	Type of trap	Agrotis pomonella (black cutworm)	Carpocapsa pomonella (codling moth)	Orthocentrus auxillaris (army cutworm)	Estigmene acrea (saw-moth)	Parotia diffusa (wheat head sawfly)	Peltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	R. zea (bollworm)	Locusts committalis (alfalfa webworm)	Locusts sticticalis (bean webworm)	Locusts gossypiphaga (cotton bollworm)	Maduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Podenia ornithogalli (gillow-stirped armyworm)	Phaenocarpa unipuncta (armyworm)	Spodoptera exiguus (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Trichoplusia ni (cabbage looper)
MISSISSIPPI Stoneville 8/17-23	69-95	trace	2BL	15			2	27	27	227					1		1	519	18	4422		
MISSOURI Portageville 8/17-23				4					1	185						966	4	36	63			
NEW JERSEY Aura 8/15-21			BL	59						3	3					3	3	27	87		30	
Evesboro 8/15-21			BL	3						2	2					3	2	3	61		2	
Plainsboro 8/15-21			BL	2												14	3	2	73		16	
Seabrook 8/15-21			BL	207						26						38	29	58	416		4	92
NORTH DAKOTA Fargo 8/22																			26			
OHIO Hilliard 8/15-21			BL	39												16	21		60			
Wooster 8/15-21			BL	7												57	22	33				
SOUTH DAKOTA Brookings 8/16-22			BL													9		37				
TEXAS Waco 8/17-23	77-98	none		23				179	47	217							4		1	51	1	4449
WISCONSIN Madison 8/15-20			BL	13							3					128	10		8			

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